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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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PHILIPS INTELLECTUAL PROPERTY & STANDARDS				DANG, HUNG Q
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		ART UNIT		PAPER NUMBER
		2633		

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Please find below and/or attached an Office communication concerning this application or proceeding.

<b>Office Action Summary</b>	Application No.	Applicant(s)
	10/043,743	LAN ET AL.
	Examiner	Art Unit
	Hung Q. Dang	2633

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

#### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

#### Status

1) Responsive to communication(s) filed on 10 January 2002.  
 2a) This action is **FINAL**.                            2b) This action is non-final.  
 3) Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

#### Disposition of Claims

4) Claim(s) 1-27 is/are pending in the application.  
 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.  
 5) Claim(s) \_\_\_\_\_ is/are allowed.  
 6) Claim(s) 1-27 is/are rejected.  
 7) Claim(s) \_\_\_\_\_ is/are objected to.  
 8) Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

#### Application Papers

9) The specification is objected to by the Examiner.  
 10) The drawing(s) filed on \_\_\_\_\_ is/are: a) accepted or b) objected to by the Examiner.  
 Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
 Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).  
 11) The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

#### Priority under 35 U.S.C. § 119

12) Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).  
 a) All    b) Some \* c) None of:  
 1. Certified copies of the priority documents have been received.  
 2. Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.  
 3. Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

#### Attachment(s)

1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)	4) <input type="checkbox"/> Interview Summary (PTO-413)
2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)	Paper No(s)/Mail Date. _____.
3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date <u>01/10/2002</u> .	5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)
	6) <input type="checkbox"/> Other: _____.

## **DETAILED ACTION**

### ***Information Disclosure Statement***

The information disclosure statement filed 01/10/2002 fails to comply with 37 CFR 1.98(a)(2), which requires a legible copy of each cited foreign patent document; each non-patent literature publication or that portion which caused it to be listed; and all other information or that portion which caused it to be listed. It has been placed in the application file, but the information referred to therein has not been considered. A copy of the document designated as "0944269A1" was not supplied by applicants and the reference number provided cannot locate the document.

### ***Claim Rejections - 35 USC § 112***

The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Claim 7 is rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claim 7 is drawn to the SD video and the extracted enhancement information being stored at a combined rate of approximately 5 megabits/second.

By using "approximately, it is unclear of what range the storing rate refers to.

### ***Claim Rejections - 35 USC § 102***

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

Claims 1-3, 7, 10, 12-13, 18, 21, 25 are rejected under 35 U.S.C. 102(e) as being anticipated by Oshima et al. (US Patent 6,925,250).

Claim 1, 18, and 25 are drawn to a recording system or method or program product for recording a high definition (HD) video onto a standard definition (SD) compatible medium, comprising: a system (method, means) for scaling down the HD video to an SD video format, a system (method, means) for encoding the SD video, a system (method, means) for extracting enhancement information from the HD video, and a system (method, means) for storing the SD video and the extracted enhancement information onto the SD compatible medium.

Oshima et al. anticipate a recording system for recording apparatus (method, program product) for recording a high definition (HD) video onto a standard definition (SD) compatible medium (see Abstract, lines 1-5), comprising a system (method, program product) for scaling down the HD video to an SD video format (see column 10, lines 11-18), a system (method, program product) for encoding the SD video (see column 10, lines 18-20), a system (method, program product) for extracting enhancement information from the HD video (column 10, lines 20-29), and a system (method, program product) for storing the SD video and the extracted enhancement information onto the SD compatible medium (column 10, lines 43-45).

Claim 2 is drawn to a DVD as the SD compatible medium, which is clearly anticipated by Oshima et al. (column 10, lines 43-45).

Claim 3 is drawn to a system for recording to comprise an MPEG-2 encoder, which is anticipated by Oshima et al. (column 10, 18-20).

Claim 7 is drawn to the SD video and the extracted enhancement information being stored at a combined rate of approximately 5 megabits/second.

Oshima et al. anticipate the SD video and the extracted enhancement information being stored at a combined rate of 8 megabits/second (see column 19, lines 26-29).

Claim 10 is drawn to the SD video can be stored in a format selected from the group consisting of: progressive and interlaced, which is anticipated by Oshima et al. (see column 15, lines 46-67; and column 16, lines 1-18).

Claim 12 and 21 are drawn to a playback system or method for reconstructing a high definition (HD) video image from a standard definition (SD) format recording, comprising: a system (method) for extracting and decoding SD data from the recording, a system (method) for extracting enhancement information from the recording, a system (method) for de-interlacing the decoded SD data, and a system (method) for up-scaling and post-processing the decoded SD data with the enhancement information to generate the HD video image.

Oshima et al. anticipate a playback system (method) for reconstructing a high definition (HD) video image from a standard definition (SD) format recording, comprising: a system (method) for extracting and decoding SD data from the recording

(column 11, lines 62-67), a system (method) for extracting enhancement information from the recording (column 11, lines 62-67), a system (method) for de-interlacing the decoded SD data (column 16, lines 28-34), and a system (method) for up-scaling and post-processing the decoded SD data with the enhancement information to generate the HD video image (column 12, lines 10-35; and column 16, lines 34-37).

Claim 13 is drawn to the enhancement information comprising information regarding to high frequency image data extracted during a recording process, which is anticipated by Oshima et al. (column 1, lines 59-62).

Claim 1-6 are rejected under 35 U.S.C. 102(e) as being anticipated by De Bonet et al. (US Patent 6510177).

Claim 1 is drawn to a recording system for recording a high definition (HD) video onto a standard definition (SD) compatible medium, comprising: a system for scaling down the HD video to an SD video format, a system for encoding the SD video, a system for extracting enhancement information from the HD video, and a system for storing the SD video and the extracted enhancement information onto the SD compatible medium.

De Bonet et al. anticipate a recording system for recording a high definition (HD) video onto a standard definition (SD) compatible medium (see Abstract), comprising a system for scaling down the HD video to an SD video format (see column 7, lines 26-34), a system for encoding the SD video (see column 3, lines 64-66; column 7, lines 26-34), a system for extracting enhancement information from the HD video (see column 7, lines 26-34), and a system for storing the SD video and the extracted enhancement

information onto the SD compatible medium (column 2, lines 66-67; and column 3, lines 1-2).

Claim 2 is drawn to a DVD as the SD compatible medium, which is clearly anticipated by De Bonet et al. (column 6, lines 35-36).

Claim 3 is drawn to a system for recording to comprise an MPEG-2 encoder, which is anticipated by De Bonet et al. (column 7, lines 29-30, 48-50).

Claim 4-6 are drawn to the enhancement information comprising high frequency image data partitioned into different energy regions, stored in an energy region map, and coded using a quadtree decomposition algorithm.

De Bonet et al. teach the processing of the enhancement information by means of 2-d wavelet transformation (see column 13, lines 34-36), which has the following properties: the enhancement information comprising high frequency image data partitioned into different energy regions, stored in an energy region map, and coded using a quad-tree decomposition algorithm.

Claims 1 and 8 are rejected under 35 U.S.C. 102(e) as being anticipated by Wu et al. (US Patent 6,907,070).

Claim 1 is drawn to a recording system for recording a high definition (HD) video onto a standard definition (SD) compatible medium, comprising: a system for scaling down the HD video to an SD video format, a system for encoding the SD video, a system for extracting enhancement information from the HD video, and a system for storing the SD video and the extracted enhancement information onto the SD compatible medium.

Wu et al. anticipate a recording system for recording a high definition (HD) video onto a standard definition (SD) compatible medium (see column 10, lines 13-18), comprising: a system for scaling down the HD video to an SD video format, a system for encoding the SD video, a system for extracting enhancement information from the HD video (see column 10, lines 29-32), and a system for storing the SD video and the extracted enhancement information onto the SD compatible medium (column 10, lines 62-65).

Claim 8 is drawn to the extracted enhancement information being stored at a rate of less than 1 megabit/second, which is overlapped in range (greater than 384 kbits/s) anticipated by prior art cited by Wu et al. (see column 5, lines 6-10).

***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claim 9 is rejected under 35 U.S.C. 103(a) as being unpatentable over Oshima et al. (US Patent 6,925,250) as applied to claims 1-3, 7, 10, 12-13, 18, 21, 25 above, and further in view of Godwin (US Patent 6310655).

Claim 9 is drawn to an aspect ratio format system for formatting the SD video for widescreen, letterboxing, and scan and pan formats.

Oshima et al. do not teach an aspect ratio format system for formatting the SD video for widescreen, letterboxing, and scan and pan formats.

Godwin teaches an aspect ratio format system for displaying a television picture comprised of several standard aspect ratio images on widescreen and standard aspect ratio video monitors (see Abstract) including pan-and-scan format monitors (see column 2, lines 28-51) while admitting by convention letterboxing format is used to show widescreen pictures (see column 1, lines 27-35).

One of ordinary skill in the art at the time the invention was made would have been motivated to incorporate the aspect ratio format system taught by Godwin into the recording system for recording high-definition (HD) video image taught by Oshima et al. to achieve compatibility of widescreen images with standard 4:3 aspect ratio televisions currently in use (see Godwin, column 1, lines 27-29).

Claims 11, 20, 26 are rejected under 35 U.S.C. 103(a) as being unpatentable over Oshima et al. as applied to claims 1-3, 10, 7, 12-13, 18, 21, 25 above, and further in view of Florencio et al. (US Patent 6,125,147) and Dutta et al. ("Smart Video Streams: 101 Uses of the User Data Field in MPEG", URL: <http://ieeexplore.ieee.org/iel3/3850/11241/00540940.pdf?arnumber=540940>).

Claim 11, 20, and 26 are drawn to the enhancement information being stored in an MPEG user-data field.

Oshima et al. do not teach using MPEG user-data field for storing enhancement information.

Florencio et al. teach a method and apparatus for reducing breathing artifacts in compressed video in which it is suggested an opportunity of an enhancement layer

stream being included within a user-data field of an MPEG stream (column 16, lines 58-62).

One of ordinary skill in the art at the time the invention was made would have been motivated to modify the recording system taught by Oshima et al. to have the enhancement information stored in the MPEG user-data field as taught by Florencio et al. because, as Dutta et al. suggested, MPEG user-data field (UDF) could be used to send information which is to be used for making “smart video stream”, which, in broadest sense, comprises high-definition (HD) video streams.

Claims 14, 15, and 19 are rejected under 35 U.S.C. 103(a) as being unpatentable over Oshima et al. (US Patent 6,925,250) as applied to claims 1-3, 7, 10, 12-13, 18, 21, 25 above, and further in view of De Bonet et al. (US Patent 6510177).

Claims 14, 15, and 19 are drawn to the enhancement information comprising high frequency image data, an energy region map, and the energy region map being coded with a quad-tree decomposition algorithm.

Oshima et al. do not teach an energy region map, and further coded with a quad-tree algorithm.

De Bonet et al. teach that the enhancement information is coded with either a DCT-based method or a progressive wavelet based method (PWC) (column 13, lines 28-40), which conventionally partition the enhancement information into energy region map. Furthermore, a progressive wavelet codec for images involves 2-D wavelet transformation, which is based on a quad-tree algorithm.

One of ordinary skill in the art at the time the invention was made would have been motivated to incorporate the coding methods taught by De Bonet et al. into the playback system taught by Oshima et al. because, according to De Bonet et al., progressive wavelet codec (PWC) is preferred for its ability to order the coded information so that, given the first part of total compressed data, a decoder can retrieve the best possible approximation to the coded image (column 14, lines 27-31).

Claim 22 is rejected under 35 U.S.C. 103(a) as being unpatentable over Oshima et al. (US Patent 6,925,250) as applied to claims 1-3, 7, 10, 12-13, 18, 21, 25 above, and further in view of De Bonet et al. (US Patent 6510177), and Florencio et al. (US Patent 6,125,147) and Dutta et al. ("Smart Video Streams: 101 Uses of the User Data Field in MPEG", URL:

<http://ieeexplore.ieee.org/iel3/3850/11241/00540940.pdf?arnumber=540940>).

Claim 22 is drawn to the enhancement information being stored in MPEG user-data field and comprising an energy map coded with a quad-tree algorithm.

Oshima et al do not teach the enhancement information being stored in MPEG user-data field and comprising an energy map coded with a quad-tree algorithm.

De Bonet et al. teach the processing of the enhancement information is based on a wavelet codec, which has properties of comprising an energy map coded with a quad-tree algorithm (column 13, lines 34-40).

Florencio et al. teach a method and apparatus for reducing breathing artifacts in compressed video in which it is suggested an opportunity of an enhancement layer

stream being included within a user-data field of an MPEG stream (column 16, lines 58-62).

One of ordinary skill in the art at the time the invention was made would have been motivated to incorporate the coding methods taught by De Bonet et al. and the using of user-data field of an MPEG stream for storing enhancement information as taught by Florencio et al. into the high-definition video image playback method taught by Oshima et al. because, according to De Bonet et al., progressive wavelet codec (PWC) is preferred for its ability to order the coded information so that, given the first part of total compressed data, a decoder can retrieve the best possible approximation to the coded image (column 14, lines 27-31) and because, as Dutta et al. suggested, MPEG user-data field (UDF) could be used to send information which is to be used for making “smart video stream”, which, in broadest sense, comprises high-definition (HD) video streams.

Claim 16 is rejected under 35 U.S.C. 103(a) as being unpatentable over Oshima et al. (US Patent 6,925,250) and De Bonet et al. (US Patent 6,510,177) as applied to claims 1-7, 10, 12-15, 18, 19, 21, 25 above, and further in view of Yang et al. (PgPub 2003/0123747).

Claim 16 is drawn to the post-processing system applying adaptive peaking with a gain map derived from the enhancement information.

Oshima et al. and De Bonet et al. do not teach a post-processing system applying adaptive peaking with a gain map derived from the enhancement information.

Yang et al. teach a system and method for enhancing sharpness of images, in which a post-processing system applying adaptive peaking (see [0041]) with a gain map derived from the enhancement information (see [0046] and [0048]) is used.

One of ordinary skill in the art at the time of invention was made would have been motivated to incorporate the enhancement method taught by Yang et al. into the high-definition video playback system taught by Oshima et al and De Bonet et al. because, according to Yang et al., video enhancement algorithms using MPEG coding information and a cost function is impractical and disadvantageous (see [0016]).

Claim 17 is rejected under 35 U.S.C. 103(a) as being unpatentable over Oshima et al. (US Patent 6,925,250) and De Bonet et al. (US Patent 6,510,177) as applied to claims 1-7, 10, 12-15, 18, 19, 21, 25 above, and further in view of He et al. (US Patent 6,600,517).

Claim 17 is drawn to the post-processing system applying luminance transient improvement with a gain map derived from the enhancement information.

Oshima et al. and De Bonet et al. do not teach a post-processing system applying luminance transient improvement with a gain map derived from the enhancement information.

He et al. teach a method and system for improving sharpness of an image comprising post-processing system (see column 4, lines 58-61) that applies luminance transient improvement (column 5, lines 23-31) with a gain map, which is the pixel intensity curve, derived from the enhancement information, which is the picture to be enhanced.

One of ordinary skill in the art at the time the invention was made would have been motivated to incorporate the sharpening method and system, which uses luminance transient improvement (LTI) with a pixel intensity curve (gain map) taught by He et al., into the playback system taught by Oshima et al and De Bonet et al. because the method taught by He et al. is to solve many problems exposed by prior art such as the problems of jitter and being unnatural (see column 5, lines 60-65).

Claim 23 is rejected under 35 U.S.C. 103(a) as being unpatentable over Oshima et al. (US Patent 6,925,250), De Bonet et al. (US Patent 6510177), Florencio et al. (US Patent 6,125,147) , and Dutta et al. ("Smart Video Streams: 101 Uses of the User Data Field in MPEG", URL:

<http://ieeexplore.ieee.org/iel3/3850/11241/00540940.pdf?arnumber=540940>), as applied to claims 1-7, 10, 12-13, 18, 21, 22, 25 above, and further in view of and Yang et al. (PgPub 2003/0123747).

Claim 23 is drawn to the decoded SD data being post-processed by applying adaptive peaking with a gain map derived from the enhancement information,

Oshima et al., De Bonet et al., Florencio et al., and Dutta et al. do not teach a post-processing system applying adaptive peaking with a gain map derived from the enhancement information.

Yang et al. teach a system and method for enhancing sharpness of images, in which a post-processing system applying adaptive peaking (see [0041]) with a gain map derived from the enhancement information (see [0046] and [0048]) is used.

One of ordinary skill in the art at the time of invention was made would have been motivated to incorporate the enhancement method taught by Yang et al. into the high-definition video playback method taught by Oshima et al, De Bonet et al, Florencio et al., and Dutta et al. because, according to Yang et al., video enhancement algorithms using MPEG coding information and a cost function is impractical and disadvantageous (see [0016]).

Claim 24 is rejected under 35 U.S.C. 103(a) as being unpatentable over Oshima et al. (US Patent 6,925,250), De Bonet et al. (US Patent 6510177), Florencio et al. (US Patent 6,125,147), and Dutta et al. ("Smart Video Streams: 101 Uses of the User Data Field in MPEG", URL:

<http://ieeexplore.ieee.org/iel3/3850/11241/00540940.pdf?arnumber=540940>), as applied to claims 1-7, 10, 12-13, 18, 19, 21, 22, and 25 above, and further in view of and He et al. (US Patent 6,600,517).

Claim 24 is drawn to the decoded SD data being processed post processed by applying luminance transient improvement with a gain map derived from the enhancement information.

Oshima et al., De Bonet et al., Florencio et al., and Dutta et al. do not teach a post-processing system applying luminance transient improvement with a gain map derived from the enhancement information.

He et al. teach a method and system for improving sharpness of an image comprising post-processing system (see column 4, lines 58-61) that applies luminance transient improvement (column 5, lines 23-31) with a gain map, which is the pixel

intensity curve, derived from the enhancement information, which is the picture to be enhanced.

One of ordinary skill in the art at the time the invention was made would have been motivated to incorporate the sharpening method and system, which uses luminance transient improvement (LTI) with a pixel intensity curve (gain map) taught by He et al., into the playback method taught by Oshima et al. De Bonet et al., Florencio et al., and Dutta et al. because the method taught by He et al. is to solve many problems exposed by prior art such as the problems of jitter and being unnatural (see column 5, lines 60-65).

Claim 27 is rejected under 35 U.S.C. 103(a) as being unpatentable over Oshima et al. (US Patent 6,925,250), Florencio et al. (US Patent 6,125,147) and Dutta et al. (“Smart Video Streams: 101 Uses of the User Data Field in MPEG”, URL: <http://ieeexplore.ieee.org/iel3/3850/11241/00540940.pdf?arnumber=540940>) as applied to claims 1-3, 10, 12-13, 18, 21, 22, and 25 above, and further in view of Yang et al. (PgPub 2003/0123747) and He et al. (US Patent 6,600,517).

Claim 27 is drawn to the post-processing means applying one of the group consisting of : adaptive peaking and luminance transient improvement, with a gain map derived from the enhancement information.

Oshima et al., Florencio et al., and Dutta et al. do not teach the post-processing means applying one of the group consisting of : adaptive peaking and luminance transient improvement, with a gain map derived from the enhancement information.

Yang et al. teach a system and method for enhancing sharpness of images, in which a post-processing system applying adaptive peaking (see [0041]) with a gain map derived from the enhancement information (see [0046] and [0048]) is used.

He et al. teach a method and system for improving sharpness of an image comprising post-processing system (see column 4, lines 58-61) that applies luminance transient improvement (column 5, lines 23-31) with a gain map, which is the pixel intensity curve, derived from the enhancement information, which is the picture to be enhanced.

One of ordinary skill in the art at the time the invention was made would have been motivated to incorporate the enhancement method taught by Yang et al. and the sharpening method, which uses luminance transient improvement (LTI) with a pixel intensity curve (gain map) taught by He et al., into the playback system and method taught by Oshima et al. De Bonet et al., Florencio et al., and Dutta et al. because the method taught by He et al. is to solve many problems exposed by prior art such as the problems of jitter and being unnatural (see column 5, lines 60-65), and , further according to Yang et al., video enhancement algorithms using MPEG coding information and a cost function is impractical and disadvantageous (see [0016]).

Therefore, the invention as a whole would have been *prima facie* obvious to one of ordinary skill in the art at the time the invention was made, absent unexpected results to the contrary.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Hung Q. Dang whose telephone number is 571-270-

1116. The examiner can normally be reached on M-Th:7:30-5:00; every other Friday: 7:30-4:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Shanon Foley can be reached on 571-272-0898. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.



Hung Q. Dang  
Patent Examiner



Shanon A. Foley  
Supervisory Patent Examiner